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**SPRING CREEK**  
(tributary to Lightning Creek)

***Summary***

The Spring Creek problem assessment will be completed in 2003 along with the Clark Fork River.

**1. Physical and Biological Characteristics**

Spring Creek is located immediately to the northwest of the town of Clark Fork, Idaho, and approximately 30 miles east of Sandpoint, Idaho. The spring Creek drainage contains 6,480 acres used primarily for forestry with small areas of rural residential. Land ownership is distributed among the Panhandle National Forest, industrial timber companies, and small private owners (Dechert 1999).

The Spring Creek watershed is underlain by Precambrian metasedimentary rocks. The landforms in Spring Creek are strongly influenced by Pleistocene glacial activity. The watershed is bisected by the northwest trending Hope Fault, with significantly different landforms on either side. Higher elevation areas to the north of the fault have been glacially scoured and are very steep and angular. Lower elevations to the south of the fault exhibit deposits of varying depths of glacial debris. Some of the lower elevation hills in the south end of the watershed were scoured by the Lake Missoula floods. The lowest elevation floodplains and terraces are Quaternary deposits (Dechert 1999).

Spring Creek is a large, spring fed tributary to lower Lightning Creek. It is the primary source of water for the Clark Fork state fish hatchery, and the community of Clark Fork has a water diversion facility further upstream. Downstream from the hatchery, Spring Creek has a low gradient channel which meanders through a modified riparian zone comprised largely of hardwoods and young conifers. Water temperatures appear to be suitable for salmonids. Juvenile bull trout have been reported from Spring Creek, but no bull trout spawning activity has been documented in recent years. Rainbow trout, westslope cutthroat trout, and brook trout have all been documented in Spring Creek. Brook trout are known to occur in high densities in the upper reaches of Spring Creek, but are uncommon in the lower reaches (Corsi 1998).

The drainage is oriented in a southerly direction with Spring Creek generally flowing from the north to the south southeast. Elevation ranges from 2120 ft at the mouth to near 6210 ft on the divide above Porcupine Lake. The drainage pattern is modified trellis with steep gradients in the bedrock-controlled portions of the watershed. In the portions of the watershed dominated by glacial and alluvial deposits, drainage patterns are irregular and poorly defined. Stream profiles here are relatively low gradient, and with the abundance of unconsolidated material, streams may go subsurface during drier portions of the year (Dechert 1999).

Spring Creek is a tributary to Lightning Creek and was also assessed by BIO/WEST, Inc. In 1992. Spring Creek was about equally dominated by pool, riffle and run habitats. Most pools were created by large organic debris. Average maximum pool depth was 14 inches (36 cm)

which was considered sub-optimal for rainbow, cutthroat, and bull trout. Residual pool depth was 6 inches (16 cm) and mean residual pool volume were also low.

## **2. Pollutant Source Inventory**

Sources potentially limiting water quality in Spring Creek are not well understood at this time. While diversions, roads, agriculture, and timber land uses exist in this watershed, they have not been adequately studied to or evaluated to determine potential effects on Spring Creek.

### **2.a. Summary of Past and Present Pollution Control Efforts**

Spring Creek was designated a Stream Segment of Concern (SSOC) on May 11, 1993, pursuant to Idaho's Antidegradation Agreement. No Local Working Committee (LWC) was required; however, on June 2, 1994 revisions pertaining to site specific best management practices (SSBMPs) were reached after consultation with other agency resource management personnel. The Director of the Idaho Department of Lands approved these SSBMPs on December 14, 1994 (Dechert 1999).

The U.S. Environmental Protection Agency determined that sediment threatens Spring Creek's beneficial uses. Based on an evaluation performed in 1996 by the IDEQ (as described below), Spring Creek was categorized as having full support of beneficial uses.

## **3. Water Quality Concerns and Status**

Spring Creek (headwaters to mouth) was listed in 1994 as a waterbody not fully supporting all of its designated beneficial uses due to sediment pollution. The source of this listing was the 305(b) report. Since then, IDEQ beneficial use reconnaissance data collected on Spring Creek was analyzed for evidence of beneficial use support. Data collected in 1995 and 1996 was first determined to be needing verification for support status. Further analysis and review has determined that, based on available data, Spring Creek is currently supporting all designated beneficial uses.

### **3.a. Applicable Water Quality Standards**

Beneficial uses that have been designated for Spring Creek include: Cold Water Biota, Salmonid Spawning, Primary Contact Recreation, Secondary Contact Recreation, Industrial Water Supply, Wildlife Habitat, and Aesthetics. Data currently available indicates that Spring Creek is fully supporting all of these beneficial uses.

### **3.b. Summary and Analysis of Existing Water Quality Data**

Spring Creek has been evaluated by the Idaho Division of Environmental Quality under auspices of the 1996 Water Body Assessment Guide. This evaluation was based upon water quality data collected as part of the Beneficial Use Reconnaissance Project. One site inspection was completed in 1995 and one in 1996 for the purpose of establishing data on beneficial use support status. These surveys were analyzed and determined to provide full support for all designated

beneficial uses.

A Cumulative Watershed Effects (CWE) assessment of the forested portions of Spring Creek was conducted by the Idaho Department of Lands to: 1.) develop an understanding of the inherent hazards of the landscape within the Spring Creek watershed, 2) document the current conditions within the watershed relevant to hydrologic processes and the disturbance history, and 3) develop a control process that will ensure that the watershed is managed to protect water quality so that beneficial uses are supported (Dechert 1999).

The results of this analyses, coupled with the results of the DEQ surveys, show that water quality and beneficial uses are being maintained in the forested portions of the watershed using current forest management practices as specified by the Site Specific Best Management Practices adopted in 1994 by the Idaho Department of Lands pursuant to the Idaho Antidegradation Agreement (Dechert 1999).

### **3.c. Data Gaps For Determination of Support Status**

An assessment of factors (pollution sources) which may be effecting or may potentially effect the water quality and aquatic habitat is desired for reference now and in the future. Continued surveying should be done to monitor support status and to identify stream segments which may be impaired.

## **4. Problem Assessment Conclusions**

### **References**

Corsi, C., DuPont J., Mosier, D., Peters, R., and Roper, B. 1998. Lake Pend Oreille Key Watershed Bull Trout Problem Assessment. Idaho Department of Health and Welfare, Division of Environmental Quality. Coeur d'Alene, Idaho.

Dechert, Tom; Raiha, Dan; and Saunders, Vincent. Idaho Department of Lands. *Spring Creek Cumulative*

J.

**TWIN CREEK**  
(tributary to Clark Fork River)

***Summary***

The Twin Creek problem assessment will be completed in 2003 along with the Clark Fork River.

**1. Physical and Biological Characteristics**

Twin Creek is a third order tributary to the lower Clark Fork River, and flows from the northern tip of the Bitterroot Range. Existing information on watershed conditions in Twin Creek indicates the system is in poor condition as a result of stream channelization, road construction and livestock grazing. Lower Twin Creek, downstream from the county road, was relocated and channelized in the early 1960's to improve agricultural production. Much of the lower reach consists of a wide shallow channel with riffle habitat being the primary feature. Riparian vegetation is limited due to livestock grazing and the modified floodplain, and consists primarily of grasses, sedges, and sparse alders. Considerable bedload moved and deposited in the lower reaches of Twin Creek during 1997.

Immediately upstream from the county road the stream has been modified to allow it to pass under the road and into the channelized reach. Further upstream the channel shows signs of recent activity and instability .

**2. Pollutant Source Inventory**

Point Source Discharges

There are no known point source discharges within the Twin Creek watershed.

Nonpoint Source Discharge

Bedload transported from upstream sources and livestock grazing appears to be potentially limiting water quality in Twin Creek.

*Agriculture/Livestock Grazing* - Affects of livestock grazing in the Twin Creek watershed represent a potential threat to water quality. In the early 1960's, the lower reach of Twin creek was channelized, significantly reducing stream length and creating a reach with high width/depth ratios and poor salmonid habitat. The channel has not recovered and grazing continues to negatively impact the stream and riparian area.

*Roads* - A portion of North Twin Creek is paralleled by a road, and there is a road which follows the valley corridor up the mainstem of Twin Creek. At this time we do not have information on the condition of these roads. The County road crosses Twin Creek just upstream from the channelized reach, and the grade of the stream has been adjusted to place the creek under the road. The sudden change in grade results in a deposition zone immediately downstream, and

limits creek restoration options.

*Timber Harvest* - Approximately 11% of the Twin Creek watershed has been harvested. Riparian harvest has reduced recruitment of large woody debris in lower reaches of the stream.

## **2.a. Summary of Past and Present Pollution Control Efforts**

Stream habitat surveys were conducted in the Twin Creek drainage by Cascades Environmental, Inc. As part of WWP's hydro relicensing process.

## **3. Water Quality Concerns and Status**

Twin Creek (headwaters to mouth) was listed in 1994 as a waterbody not fully supporting all of its designated beneficial uses due to sediment and nutrient pollution. The source of this listing was the 305(b) report. Since then, IDEQ beneficial use reconnaissance data collected on Twin Creek was analyzed for evidence of beneficial use support. Data collected in 1995 and 1996 was first determined to be needing verification for support status. Further analysis and review has determined that, based on available data, Spring Creek is currently supporting all designated beneficial uses.

### **3.a. Applicable Water Quality Standards**

Beneficial uses that have been designated for Twin Creek include: Cold Water Biota, Salmonid Spawning, Primary Contact Recreation, Secondary Contact Recreation, Industrial Water Supply, Wildlife Habitat, and Aesthetics.

Additionally, Twin Creek is under scrutiny as a high priority under the Lake Pend Oreille Key Watershed Bull Trout Problem Assessment for sustainable persistence of bull trout, a federally protected species under the Endangered Species Act.

### **3.b. Summary and Analysis of Existing Water Quality Data**

### **3.c. Data Gaps For Determination of Support Status**

## **4. Problem Assessment Conclusions**

### **References**

Corsi, C., DuPont J., Mosier, D., Peters, R., and Roper, B. 1998. Lake Pend Oreille Key Watershed Bull Trout Problem Assessment. Idaho Department of Health and Welfare, Division of Environmental Quality. Coeur d'Alene, Idaho.